



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/607,074	06/29/2000	John Christian Fluke	RAL9-1999-0133US1	7844
------------	------------	----------------------	-------------------	------

25299 7590 01/21/2003

IBM CORPORATION
PO BOX 12195
DEPT 9CCA, BLDG 002
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

KISS, ERIC B

ART UNIT	PAPER NUMBER
----------	--------------

2122

DATE MAILED: 01/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

720

Office Action Summary

Application No.

09/607,074

Applicant(s)

FLUKE ET AL.

Examiner

Eric B. Kiss

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 29 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-57 have been examined.

Information Disclosure Statement

2. The information disclosure statement filed June 29, 2000, fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. German Patent No. DE 4440438 A1 (reference 10) is not accompanied by such an explanation of relevance. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

3. The information disclosure statement filed June 29, 2000, fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. A copy of the cited publication "Triggering Scheme to Trap Trace Data" (reference 16) has not been provided. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Art Unit: 2122

4. U.S. Patent No. 5,841,250 (reference 2) appears to have been cited in error in the information disclosure statement filed June 29, 2000. The information disclosed therein appears on its face to describe a stage apparatus and motor assembly for semiconductor wafer processing, and such information appears to be unrelated to the present application's disclosure. Accordingly, the information has not been fully considered by the Examiner. Applicant is free to resubmit this document for consideration if it is determined that the citation was not made in error.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 19, 38, and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19, 38, and 57 recite the limitation "the non-volatile storage medium" in the last line of each claim. There is insufficient antecedent basis for this limitation in the claim. Since "a non-volatile storage medium" is first introduced (relative to the context of claims 19, 38, and 57) in claims 18, 37, and 56, respectively, it is presumed that claims 19, 38, and 57 should be dependent on parent claims 18, 37, and 56, rather than on 17, 36, and 55, and accordingly, the

Art Unit: 2122

dependency is subsequently treated as such for the purpose of further examination. This treatment is applied in the interest of compact prosecution.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, 4-6, 9, 20, 21, 23-25, 28, 39, 40, 42-44, and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,983,366 to King.

As per claim 1, King discloses a method of printing data from an application, comprising the steps of: invoking a print function with a format argument and at least one data argument from the application (trace definition and trace information; see column 14, lines 1-22; and column 18, lines 42-50); saving the format argument and the at least one data argument in a deferred trace data buffer (packed message; see column 19, lines 40-44); returning to the application that invoked the print function (continuing execution); then processing the deferred trace data buffer to print the at least one data argument (causing an output of the print messages; see column 18, lines 38-64; and Fig. 5).

As per claim 2, King further discloses the step of processing the deferred trace data buffer to print the at least one data argument comprises the steps of: retrieving the format argument and the at least one data argument from the deferred trace data buffer; formatting the at least one data argument based on the format argument; and printing the formatted at least one data argument (see column 19, lines 45-52).

As per claims 4 and 5, King further discloses determining if a deferred print flag has been set (class control); the step of saving the format argument and the at least one data argument in the deferred trace data buffer comprising the step of: saving the at least one data argument in the deferred trace data buffer if the deferred print flag has been set; and the step of processing the deferred trace data buffer to print the at least one data argument comprising the step of: processing the deferred trace data buffer to print the at least one data argument if the deferred print flag has been set (see column 14, lines 23-34).

As per claim 6, King further discloses the step of saving the format argument and the at least one data argument in the deferred trace buffer and the step of processing the deferred trace buffer to print the at least one data argument are performed in different execution threads (see column 19, lines 57-62).

As per claim 9, King discloses a method of printing data from an application, comprising the steps of: invoking a print function with a format argument from the application (trace definition and trace information; column 14, lines 1-22; see column 18, lines 42-50); saving the format argument in a deferred trace data buffer (packed message; see column 19, lines 40-44); returning to the application that invoked the print function (continuing execution); then

Art Unit: 2122

processing the deferred trace data buffer to print the format argument (causing an output of the print messages; see column 18, lines 38-64; and Fig. 5).

As per claims 20, 21, 23-25, 28, 39, 40, 41-44, and 47, these are system and computer readable medium versions of the claimed methods discussed above (claims 1, 2, 4-6, and 9), wherein all claim limitations also have been addressed as set forth above. King further discloses a system and a computer-readable medium for performing the aforementioned method steps (see Figs. 4 and 5).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 7, 8, 15-19, 26, 27, 34-38, 45, 46, and 53-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,983,366 to King in view of Keith Bugg, "Debugging Visual C++ Windows; Chapter 3: The Visual C++ Debugging Environment," 1998 (hereinafter Bugg).

As per claim 7, King discloses such a method (see disclosure applied above to claim 1), including a memory content comprising an address space of the application stored in a non-volatile storage medium (application program stored within the GSM transceiver is inherently

Art Unit: 2122

resident in a non-volatile storage medium). King fails to expressly disclose saving the deferred trace data buffer and a memory content comprising an address space of the application in a non-volatile storage medium. However, Bugg teaches sending debugging output, including format and data arguments to a file, a debugger, and/or a message window (see “_CrtDbgReport()” on page 2). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of King to include saving the deferred trace data buffer and a memory content comprising an address space of the application in a non-volatile storage medium (such as a file) as per the teachings of Bugg. One would be motivated to do so to have the ability to store debugging reports for later transmission or viewing.

As per claim 8, in addition to the disclosure and teachings applied above, King further discloses the step of saving the format argument and the at least one data argument being performed on a first computing machine and the step of processing the deferred trace data buffer to print the at least one data argument is performed on a second computing machine, the second computing machine being different from the first computing machine (see Fig. 4; and column 13, lines 17-28) and having access to the address space of the application via the non-volatile storage medium (compiling a trace control table into the data processing system application program; see column 15, line 65 through column 16, line 9). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claims 15 and 16, King discloses such a method (see disclosure applied above to claim 9), but fails to expressly disclose the format argument being a pointer to a memory location in an address space of the application; saving a contents of the memory location in the address space of the application that is referenced by the pointer in the deferred trace data buffer;

Art Unit: 2122

and processing the deferred trace data buffer to print the contents of the memory location in the address space of the application that is referenced by the pointer. However, Bugg teaches a format argument a debugging information output command being a pointer to a memory location in an address space of an application (see “*format” in the `_CrtDbgReport()` prototype declaration on page 2). Bug further teaches using the format pointer to reference a string for an output message (see the second-to-last paragraph of page 2). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of King to include a pointer to a memory location in an address space of the application and saving and printing the contents of the memory referenced by the pointer as per the teachings of Bugg. One would be motivated to do so to allow for efficient access to character string data.

As per claim 17, in addition to the teachings applied above, King further discloses the step of saving the format argument and the at least one data argument in the deferred trace buffer and the step of processing the deferred trace buffer to print the at least one data argument are performed in different execution threads (see column 19, lines 57-62). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 18, King discloses such a method (see disclosure applied above to claim 16) but fails to expressly disclose saving the deferred trace data buffer to a non-volatile storage medium. However, Bugg further teaches sending debugging output, including format and data arguments to a file, a debugger, and/or a message window (see “`_CrtDbgReport()`” on page 2). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of King to include saving the deferred trace

Art Unit: 2122

data buffer to a non-volatile storage medium (such as a file) as per the teachings of Bugg. One would be motivated to do so to have the ability to store debugging reports for later transmission or viewing.

As per claim 19, King further discloses the step of saving the format argument and the at least one data argument being performed on a first computing machine and the step of processing the deferred trace data buffer to print the at least one data argument is performed on a second computing machine, the second computing machine being different from the first computing machine (see Fig. 4; and column 13, lines 17-28) and having access to the address space of the application via the non-volatile storage medium (compiling a trace control table into the data processing system application program; see column 15, line 65 through column 16, line 9). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claims 26, 27, 34-38, 45, 46, and 53-57, these are system and computer readable medium versions of the claimed methods discussed above (claims 7, 8, and 15-19), wherein all claim limitations also have been addressed as set forth above. King further discloses a system and a computer-readable medium for performing the aforementioned method steps (see Figs. 4 and 5). Therefore, for reasons stated above, such claims also would have been obvious.

11. Claims 3, 22, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of Bugg and further in view of Bill Karwin, "Subject: Okay," 1990 (hereinafter Karwin).

As per claim 3, King discloses such a method (see disclosure applied above to claim 2) but fails to expressly disclose determining if the format argument specifies a character string conversion, formatting the at least one data argument based on the format argument, and printing

Art Unit: 2122

an address of a respective one of the at least one data argument that corresponds to the character string conversion. However, Bugg teaches sending debugging output, including format and data arguments to a file, a debugger, and/or a message window using a “printf()-like” function (see “_CrtDbgReport()” on page 2). Karwin further teaches a printf() function having format arguments specifying character string conversion and a data argument supplying an address to be substituted into the format string during processing of the function (see the printf() examples given in the first half of page 2). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of King to include printing an address corresponding to a character string conversion as per the combined teachings of Bugg and Karwin. One would be motivated to do so to allow addresses corresponding to stored variables to be displayed in a trace output.

As per claims 22 and 41, these are system and computer readable medium versions of the claimed methods discussed above (claim 3), wherein all claim limitations also have been addressed as set forth above. King further discloses a system and a computer-readable medium for performing the aforementioned method steps (see Figs. 4 and 5). Therefore, for reasons stated above, such claims also would have been obvious.

12. Claims 10, 29, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,983,366 to King in view of U.S. Patent No. 6,282,701 to Wygodny et al.

As per claim 10, King discloses such a method (see disclosure applied above to claim 9) but fails to expressly disclose the format argument being a pointer to a memory location in an address space of the application, and saving the pointer in the deferred trace data buffer.

Art Unit: 2122

However, Wygodny et al. teach displaying a pointer (for example, variable names) and the contents of the memory referred to by the pointer as part of a trace output display (see Fig. 11; and column 20, lines 1-26). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of King to include a pointer as a format argument as per the teachings of Wygodny et al. One would be motivated to do so to be able to display the memory locations stored in pointer variables in a trace output.

As per claims 29 and 48, these are system and computer readable medium versions of the claimed method discussed above (claim 10), wherein all claim limitations also have been addressed as set forth above. King further discloses a system and a computer-readable medium for performing the aforementioned method steps (see Figs. 4 and 5). Therefore, for reasons stated above, such claims also would have been obvious.

13. Claims 11-14, 30-33, and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of Wygodny et al. as applied to claim 10 above, and further in view of Bugg.

As per claims 11-14, in addition to the teachings applied above, see the rationale provided above for claims 16-19, wherein all limitations have been addressed as set forth above. Accordingly, for reasons stated above, such claims also would have been obvious.

As per claims 30-33 and 49-52, these are system and computer readable medium versions of the claimed methods discussed above (claims 11-14), wherein all claim limitations also have been addressed as set forth above. King further discloses a system and a computer-readable

Art Unit: 2122

medium for performing the aforementioned method steps (see Figs. 4 and 5). Therefore, for reasons stated above, such claims also would have been obvious.

Art Unit: 2122

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Kiss whose telephone number is (703) 305-7737. The examiner can normally be reached on Tue. - Fri., 7:30 am - 5:00 pm. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (703) 308-4789.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, DC 20231

Or faxed to:

(703) 746-7239 (for formal communications intended for entry)

Or:

(703) 746-7240 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, 22202, Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

EBK
January 15, 2003


ANIL KHATRI
PRIMARY EXAMINER